I. INTRODUCTION TO THE SECTOR NOTEBOOK PROJECT

I.A. Summary of the Sector Notebook Project

Environmental policies based upon comprehensive analysis of air, water and land pollution (such as economic sector, and community-based approaches) are becoming an important supplement to traditional single-media approaches to environmental protection. Environmental regulatory agencies are beginning to embrace comprehensive, multi-statute solutions to facility permitting, compliance assurance, education/outreach, research, and regulatory development issues. The central concepts driving the new policy direction are that pollutant releases to each environmental medium (air, water and land) affect each other, and that environmental strategies must actively identify and address these interrelationships by designing policies for the "whole" facility. One way to achieve a whole facility focus is to design environmental policies addressing all media for similar industrial facilities. By doing so, environmental concerns that are common to the manufacturing of similar products can be addressed in a comprehensive manner. Recognition of the need to develop the industrial ?sector-based" approach by the EPA Office of Compliance led to the creation of this document.

The Sector Notebook Project was initiated by the Office of Compliance within the Office of Enforcement and Compliance Assurance (OECA) to provide its staff and managers with summary information for eighteen specific industrial sectors. As other EPA offices, states, the regulated community, environmental groups, and the public became interested in this project, the scope of the original project was expanded. The ability to design comprehensive, common sense environmental protection measures for specific industries is dependent on knowledge of several interrelated topics. For the purposes of this project, the key elements chosen for inclusion are: general industry information (economic and geographic); a description of industrial processes; pollution outputs; pollution prevention opportunities; federal statutory and regulatory framework; compliance history; and a description of partnerships that have been formed between regulatory agencies, the regulated community and the public.

For any given industry, each topic listed above alone could be the subject of a lengthy volume. However, to produce a manageable document, this project focuses on providing summary information for each topic. This format provides the reader with a synopsis of each issue, and references where more in-depth information is available. Text within each profile was researched from a variety of sources, and was usually condensed from more detailed sources pertaining to specific topics. This approach allows for a wide coverage of activities that can be explored further based upon the references listed at the end of this profile. As a check on the information included, each notebook went through an external document review process. The Office of

Compliance appreciates the efforts of all those that participated in this process and enabled us to develop more complete, accurate and up-to-date summaries.

I.B. Additional Information

Providing Comments

OECA's Office of Compliance plans to periodically review and update notebooks and will make these updates available both in hard copy and electronically. If you have any comments on the existing notebook, or if you would like to provide additional information, please send a hard copy and computer disk to the EPA Office of Compliance, Sector Notebook Project, 401 M St., SW (2223-A), Washington, DC 20460. Comments can also be sent via the web page.

Adapting Notebooks to Particular Needs

The scope of the industry sector described in this notebook approximates the relative national occurrence of facility types within the sector. In many instances, industries within specific geographic regions or states may have unique characteristics that are not fully captured in these profiles. For this reason, the Office of Compliance encourages state and local environmental agencies and other groups to supplement or repackage the information included in this notebook to include more specific industrial and regulatory information that may be available. Additionally, interested states may want to supplement the "Summary of Applicable Federal Statutes and Regulations" section with state and local requirements. Compliance or technical assistance providers also may want to develop the "Pollution Prevention" section in more detail. Please contact the appropriate specialist listed on the opening page of this notebook if your office is interested in assisting us in the further development of the information or policies addressed within this volume. If you are interested in assisting in the development of new notebooks, please contact the Office of Compliance at 202-564-2310.

II. INTRODUCTION TO THE AGRICULTURAL PRODUCTION INDUSTRIES: CROPS, GREENHOUSES/NURSERIES, AND FORESTRY

This section provides background information on three types of agricultural production industries:

- Establishments that produce crops, including oilseed and grains, vegetables and melons, fruit and tree nuts, and other crops
- Greenhouses and nurseries
- Establishments engaged in forestry and logging.

This section defines these industries in terms of their North American Industrial Classification System (NAICS) codes. According to NAICS, establishments that produce crops and greenhouses/nurseries are classified in ***NAICS code 111 (Crop Production)***. Because greenhouses/nurseries comprise a large number of the entities in NAICS 111 and are somewhat different in actual practices, this notebook presents data and information on them separately from crop production. Greenhouse, nursery, and floriculture production is classified as ***NAICS code 1114.*** Establishments engaged in forestry are classified in ***NAICS code 113 (Forestry and Logging)***. The forestry production industry has practices that differ significantly from those used for crops and greenhouses/nurseries.

The Office of Management and Budget (OMB) has replaced the Standard Industrial Classification (SIC) system, which was used to track the flow of goods and services within the economy, with the NAICS. The NAICS, which is based on similar production processes to the SIC system, is being implemented by OMB.

Establishments primarily engaged in crop production and forestry are classified in subgroup(s), up to six digits long, based on the total value of sales of agricultural products. An establishment would be placed in the group that represents 50 percent or more of its total sales. For example, if 51 percent of the total sales of an establishment is wheat, then it would be classified under NAICS codes 1111 (Oilseed and Grain Farming) and 11114 (Wheat Farming).

Data for the notebook, specifically in this chapter, were obtained from the U.S. Department of Agriculture (USDA) and the 1997 Agriculture Census (Ag Census). All data are the most recent publicly available data for the source cited.

II.A. General Overview of Agricultural Establishments

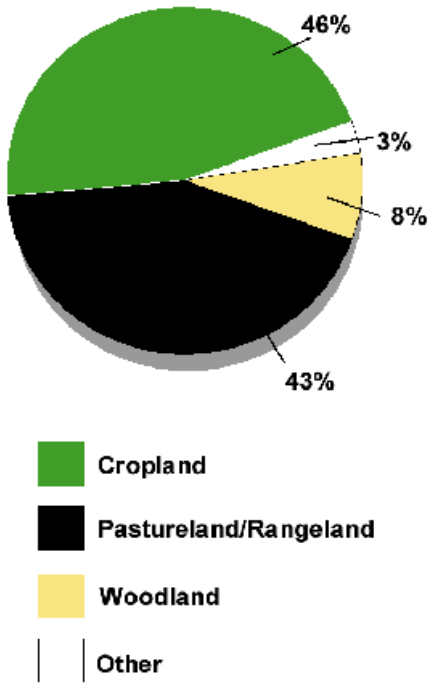
This section presents a general overview of agricultural establishments to provide background information regarding the number of such establishments

and production data. The USDA's National Agricultural Statistics Service (NASS) defines an *agricultural establishment* (i.e., farm) based on production. It defines a farm as a place which produced or sold, or normally would have produced or sold, $1,000 or more of agricultural products during the year. Agricultural products include all products grown by establishments described in this profile, which are classified under NAICS codes 111, 113, and 1114, as well as those in NAICS code 112 - Animal Production, which are covered in the *Profile of the Agricultural Livestock Production Industry*.

According to the 1997 Ag Census, there were more than 1.9 million farms (i.e., agricultural establishments) in the United States. Of these, approximately 47 percent (902,372 farms) were classified as NAICS code 111 - Crop Production. The other 53 percent (1,009,487 farms) were classified as NAICS code 112 - Animal Production. These 1.9 million agricultural establishments represent nearly 932 million acres of land, with the average agricultural establishment consisting of 487 acres. (Note: 1 acre is approximately the size of a football field.) Both of these numbers--932 million acres and 487 acres--are smaller than those for 1992, which were 946 million acres and 491 acres, respectively.

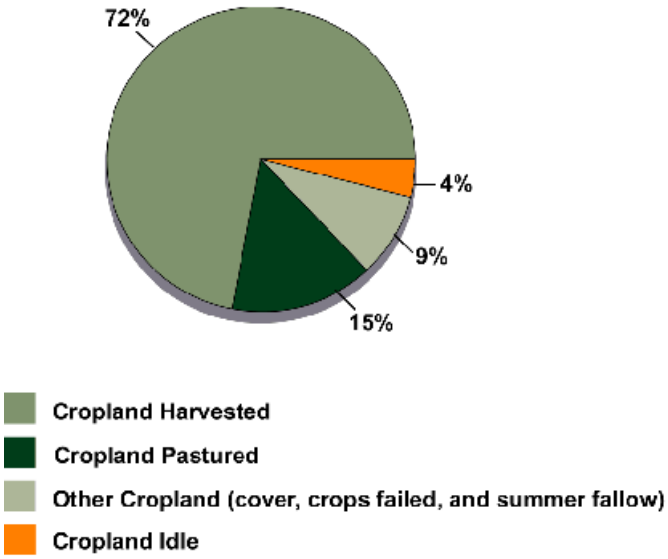
As shown in Exhibit 1, of the 932 million acres of agricultural land, the overwhelming majority (89%) consists of cropland and pastureland/rangeland.

Exhibit 1. Agricultural Land Use in the U.S. (1997 Ag Census)



As presented in Exhibit 2, the 1997 Ag Census describes cropland as:

Exhibit 2. Types of Cropland (1997 Ag Census)



- *Harvested cropland* -- Includes all acreage from which crops are harvested, such as: (1) corn, wheat, barley, oats, sorghum, soybeans, cotton, and tobacco; (2) wild or tame harvested hay, silage, and green chop; and (3) vegetables. It also includes land in orchards and vineyards; all acres in greenhouses, nurseries, Christmas trees, and sod; and any other acreage from which a crop is harvested even if the crop is considered a partial failure and the yield is very low.

- *Cropland used only for pasture or grazing* -- Includes land pastured or grazed which could be used for crops without any additional improvement, and land in planted crops that is pastured or grazed before reaching maturity.

- *Cropland used for cover crops* -- Includes land used only to grow cover crops for controlling erosion or to be plowed under for improving the soil.

- *Cropland on which all crops failed* -- Includes: (1) all land from which a crop failed (except fruit or nuts in an orchard, grove, or vineyard being maintained for production) and no other crop is harvested and which is not pastured or grazed, and (2) acreage not harvested due to low prices or labor shortages.

- *Cultivated summer fallow* -- Includes cropland left unseeded for harvest, and cultivated or treated with herbicides to control weeds and conserve moisture.

- *Idle cropland* -- Includes any other acreage which could be used for crops without any additional improvement and which is not included in one of the above categories of cropland.

The 1997 Ag Census describes pastureland and rangeland as land, other than cropland or woodland pasture, that is normally used for pasture or grazing. This land, sometimes called "meadow" or "prairie," may be composed of bunchgrass, shortgrass, buffalo grass, bluestem, bluegrass, switchgrass, desert shrubs, sagebrush, mesquite, greasewood, mountain browse, salt brush, cactus, juniper, and pinion. It also can be predominantly covered with brush or browse.

As shown in Exhibit 3, approximately 82 percent of agricultural establishments in 1997 consisted of fewer than 500 acres; only 4 percent consisted of 2,000 or more acres.

Exhibit 3. Acreage of Agricultural Establishments in the U.S. (1997 Ag Census)

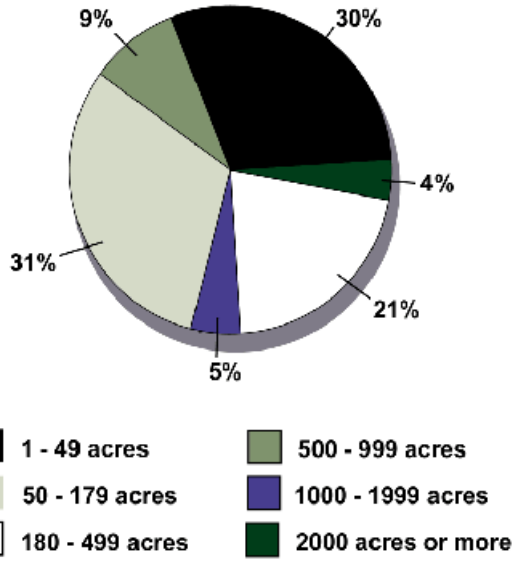
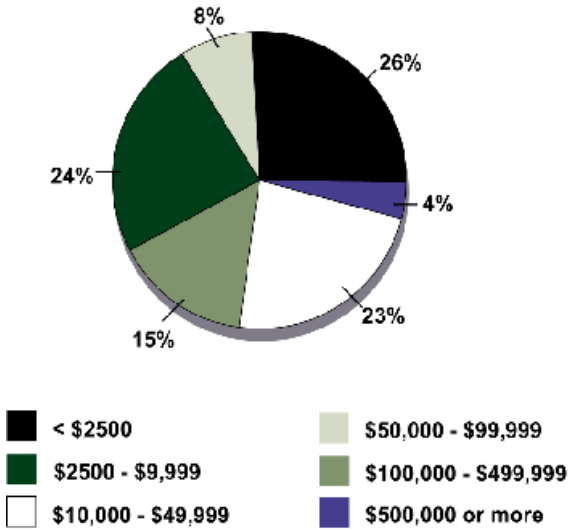


Exhibit 4. Agricultural Establishments by Value of Sales (1997 Ag Census)



According to the 1997 Ag Census, all agricultural establishments combined to produce approximately $197 billion worth of agricultural products.

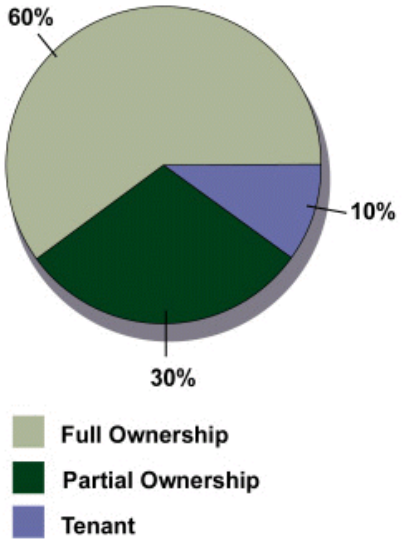
The market value of the agricultural products sold was split almost evenly between crop production, including nursery and greenhouse crops (49.6%) and livestock production (50.4%).

As shown in Exhibit 4, approximately 73 percent of all agricultural establishments produced less than $50,000 worth of agricultural products.

In addition to tracking the number of agricultural establishments and the value of products sold, the Ag Census tracks and identifies other characteristics of agricultural establishments, such as ownership and organization. Exhibit 5 presents a breakdown of the ownership status of agricultural establishments in the U.S. The Ag Census basically identifies the ownership status of agricultural establishments by one of three categories:

- Full ownership, in which full owners operate only the land they own.
- Partial ownership, in which partial owners operate land they own and also land they rent from others.
- Tenant/rental arrangement, in which tenants operate only land they rent from others or work on shares for others.

Exhibit 5. Ownership Status of Agricultural Establishments in the U.S.
(1997 Ag Census)



The Census further classifies agricultural establishment ownership by the person or entity who owns the establishment. There are four distinct types of organization: (1) individual or family (sole proprietorship); (2) partnership, including family partnership; (3) corporation, including family corporation, and (4) other, including cooperatives, estate or trust, and institutional. Approximately 86 percent of all establishments are owned and operated by individuals or families. Partnerships account for another 9 percent of the establishments and corporations own just more than 4 percent of the establishments. Fewer than 1 percent of all farms are owned by other organizations (1997 Ag Census).

II.B. Characterization of the Crop Production Industry

This section provides data and information on the crop production industry. For the purposes of this profile, crop production includes the four categories of commodities presented in Exhibit 6. This notebook follows the structure provided by the 1997 Ag Census, which classifies all of these commodity production operations within NAICS code 111. Because the notebook is addressing greenhouse, nursery, and floriculture products separately in the next section, they are not included within this discussion.

Exhibit 6. 1997 NAICS Descriptions for Crop Production (NAICS 111)

Type of Establishment	NAICS Code	SIC Code	Description
Oilseed and Grain	1111	0116, 0119	Establishments primarily engaged in: 1) growing oilseed and/or grain crops and/or 2) producing oilseed and grain seeds. These crops have an annual growth cycle and are typically grown in open fields.
Vegetables and Melons	1112	0134, 0139, 0161	Establishments primarily engaged in growing root and tuber crops (except sugar beets and peanuts) or edible plants and/or producing root and tuber or edible plant seeds. The crops included in this group have an annual growth cycle and are grown in open fields.
Fruits and Tree Nuts	1113	0171, 0172, 0173, 0174, 0175, 0179	Establishments primarily engaged in growing fruit and/or tree nut crops. The crops included in this industry group are generally not grown from seeds and have a perennial life cycle.
Other Crops	1119	0131, 0132, 0133, 0139, 0191, 0831, 2099	Establishments primarily engaged in: 1) growing crops (other than those listed previously), such as tobacco, cotton, sugarcane, hay, sugar beets, peanuts, agave, herbs and spices, and hay and grass seeds, or 2) growing a combination of these crops.

In 1997, there were 845,180 establishments producing the four categories of commodities referenced above. All these establishments combined covered nearly 400 million acres, of which more than half (236 million acres) was harvested cropland. The average crop producing establishment in 1997 was approximately 473 acres in size and averaged approximately 279 acres of harvested cropland. Of the 845,180 crop producing establishments, more than 50 percent (462,877) were classified as oilseed and grain farming (see Exhibit 7). Also, as shown in Exhibit 8, oilseed and grain farming accounted for the majority of the land in acres as well as harvested cropland.

Exhibit 7. Number of Farms
(1997 Ag Census)

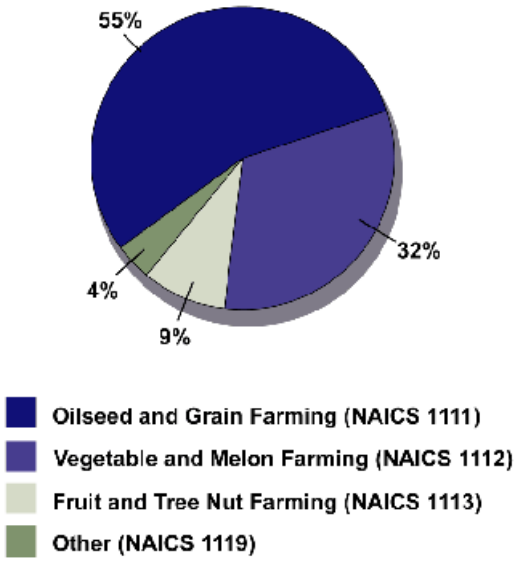


Exhibit 8. Land in Acres vs. Acres of Harvested Cropland (in millions of acres) (1997 Agriculture Census)

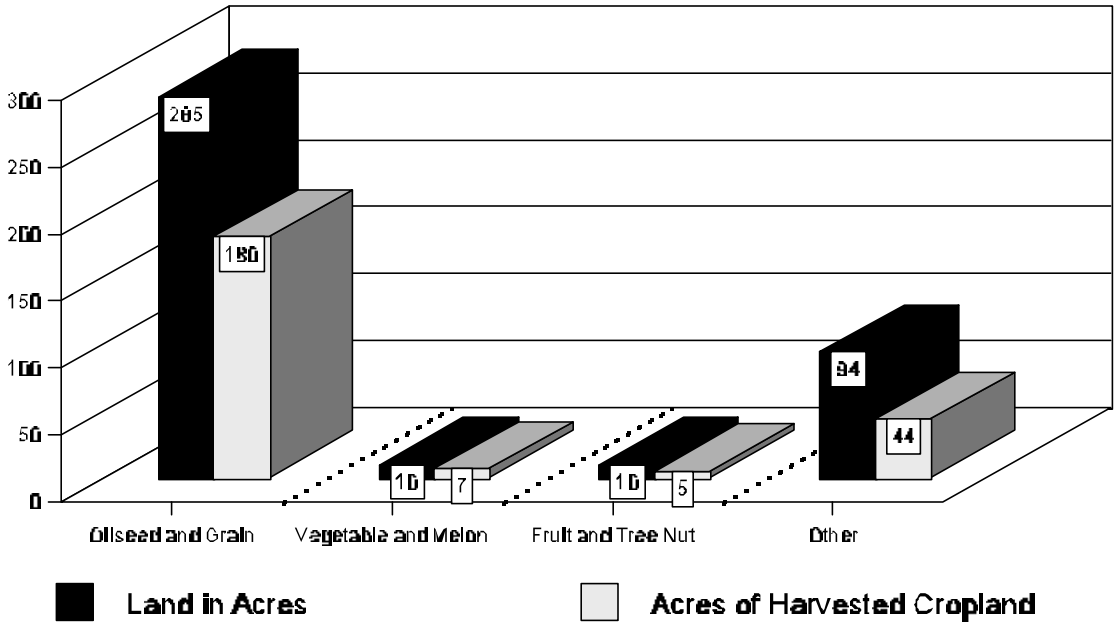
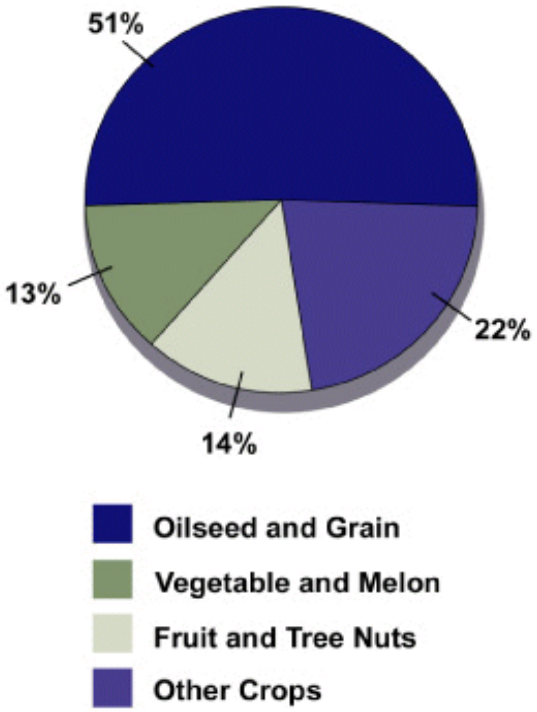


Exhibit 9. Percent of Sales by Type of Establishment (1997 Ag Census)



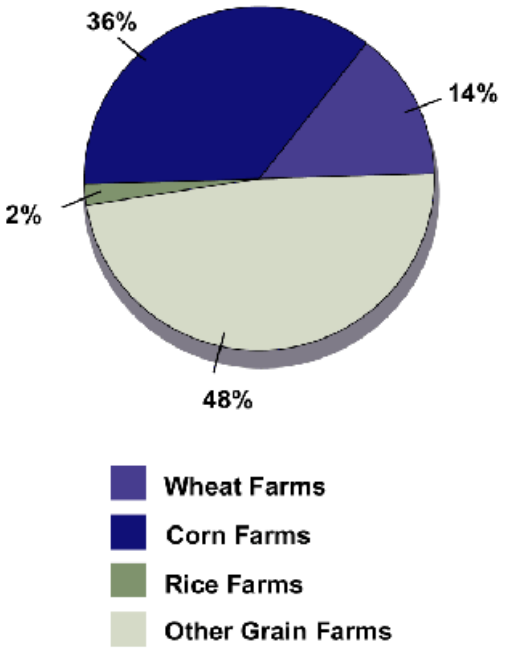
The four types of crop-producing establishments defined above accounted for approximately $87 billion worth of products sold in 1997. Exhibit 9 presents the distribution of those sales among the four types of establishments.

II.B.1. Oilseed and Grain

Oilseed and grain accounted for the majority of agricultural sales in the U.S. in 1997. For the purposes of the 1997 Ag Census, oilseed includes primarily soybeans, but also dry peas and beans, canola, flaxseeds, mustard seeds, oilseeds, rapeseeds, safflower, sesame seeds, and sunflowers. Grain includes wheat, corn, rice, and other grains such as barley, broomcorn, buckwheat, milo, oats, rye, sorghum, and wild rice. These grains are considered both food and feed grains, meaning they may be used either in food production or as feed for livestock.

In 1997, there were 462,877 oilseed and grain establishments in the U.S.; 94,481 were oilseed establishments and 368,396 were grain establishments. As shown in Exhibit 10, corn-producing establishments comprise the majority of the grain establishments in the U.S. On average, each grain-producing establishment is approximately 671 acres. Of those, approximately 407 acres are harvested cropland.

Exhibit 10. Type of Grain Farms (1997 Ag Census)



II.B.2. Vegetables and Melons

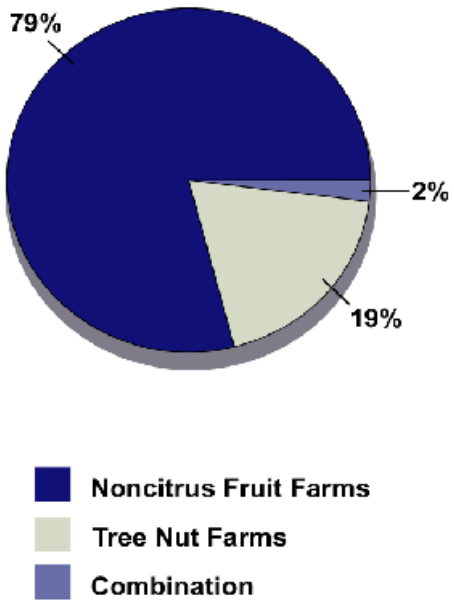
Vegetable and melon farming accounts for 31,030 establishments, or just less than 4 percent of the total crop-producing establishments in the U.S. An average vegetable and melon establishment consists of approximately 330 acres, of which approximately 170 acres are harvested cropland. Potato farming is the largest subgroup within vegetable and melon farming. It comprises nearly 12 percent of all vegetable and melon farms. The average potato-producing establishment has approximately 981 acres; approximately 730 of these acres are harvested cropland.

II.B.3. Fruit and Tree Nuts

Fruit and tree nut farming comprised the third largest group of crop-producing establishments combining for 81,956 establishments. This category is basically broken into two categories: 1) citrus fruits, and 2) noncitrus fruits and tree nuts. Citrus-producing establishments (i.e., groves) accounted for 12,275 establishments, or approximately 15 percent of all fruit and tree nut establishments. Noncitrus fruits and tree nuts, which include apples, grapes, strawberries, other berries, tree nuts, and other noncitrus fruits, comprised the remainder of the establishments (69,681) in 1997. (Tree nuts include almonds, hazelnuts, walnuts, macadamia nuts, pecans, and pistachios.) The percentages of noncitrus fruit and tree nut establishments are presented in Exhibit 11.

In 1997, the average fruit and tree nut establishment was 127 acres, with approximately half of those acres being harvested. Orange groves accounted for more than 75 percent of all citrus fruit establishments. Florida dominates citrus fruit production, except for lemons. Noncitrus fruits are grown across the country. Tree nuts are grown primarily in California and Hawaii.

Exhibit 11. Noncitrus Fruit and Tree Nut Farms
(1997 Ag Census)

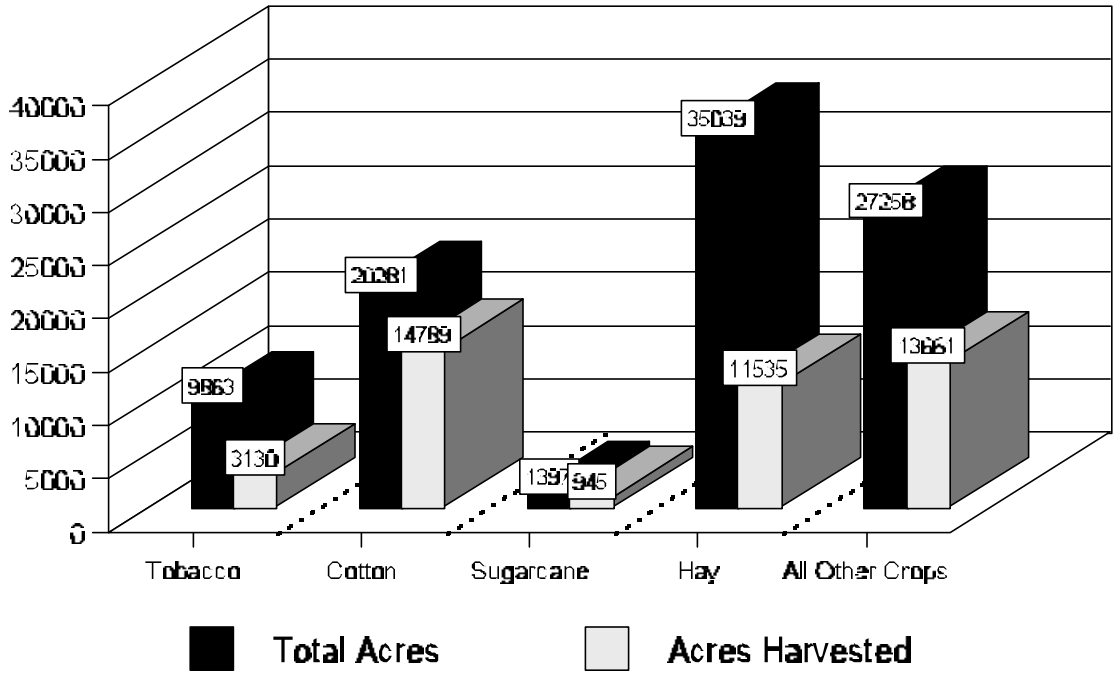


II.B.4. Other Crops

The category of Other Crops comprised the second largest group of crop-producing establishments in the U.S. in 1997. A total of 269,317 farms were classified as NAICS code 1119 - Other Crops Farming. These other crops include tobacco, cotton, sugarcane, and hay, as well as other specialty crops such as honey and sugarbeets. Of the 269,317 other crop farms, 52 percent were classified as hay farms. Tobacco farms accounted for 24 percent of these establishments and cotton-producing establishments represented 7 percent. Sugarcane farms accounted for less than 1 percent of all establishments in this category. The remaining 17 percent were classified in the All Other Crops category.

These establishments combined for a total land area of approximately 94 million acres, or approximately 349 acres per establishment. The average number of acres harvested was 164 acres. Exhibit 12 provides a comparison of total acres to acres harvested for other crops.

Exhibit 12. Total Acres vs. Acres Harvested of Other Crops (in thousands of acres) (1997 Ag Census)



II.C. Characterization of the Greenhouse, Nursery, and Floriculture Production Industry

Although the greenhouse, nursery, and floriculture industry is classified under NAICS code 111, this profile separates it into its own section because its practices and environmental impacts are different from those associated with the crops discussed in Section II.B.

In 1997, according to the Ag Census, there were 57,192 farms classified as NAICS code 1114, which is Greenhouse, Nursery, and Floriculture Production. This industry group consists of establishments that primarily grow crops of any kind under cover and/or grow nursery stock and flowers. "Under cover" is generally defined as in greenhouses, cold frames, cloth houses, and lath houses. The crops grown are removed at various stages of maturity and have annual and perennial life cycles. The nursery stock includes short rotation woody crops that have growth cycles of 10 years or less.

Of the 57,192 establishments classified as NAICS 1114, 97 percent were nursery and floriculture production (NAICS code 11142). The remaining 3 percent were classified as NAICS code 11141 - food crops grown under cover. Within the nursery and floriculture classification, there are two distinct categories:

- ***Nursery and tree production***, which consists of establishments primarily engaged in growing nursery products, nursery stock, shrubbery, bulbs, fruit stock, and sod, and those engaged in growing short rotation woody trees with a growth and harvest cycle of 10 years or less for pulp or tree stock, such as Christmas trees, under cover or in open fields.

- ***Floriculture production***, which consists of establishments primarily engaged in growing and/or producing floriculture products, such as cut flowers, cut cultivated greens (e.g., leatherleaf ferns, chamaedorea, etc.), potted flowering and foliage plants, and flower seeds, under cover or in open fields.

In 1997, there were 33,935 nursery and tree production establishments and 21,824 floriculture establishments. These establishments combined for total sales of nearly $10 billion, or approximately 10 percent of the total value of all crops sold in 1997. The average size of nursery and tree production establishments is nearly 92 acres, with an average of approximately 35 acres being harvested cropland. Floriculture production establishments average 35 acres in size with approximately one-third of that acreage being harvested cropland. California and Florida account for the majority of the establishments, as well as sales, in the floriculture industry.

Exhibits 13 and 14 show the value of greenhouse, nursery, and floriculture production compared to total crop production, and the value of greenhouse, nursery, and floriculture production sales, respectively.

Exhibit 13. Value of Greenhouse, Nursery, and Floriculture Production Compared to Total Crop Production (1997 Ag Census)

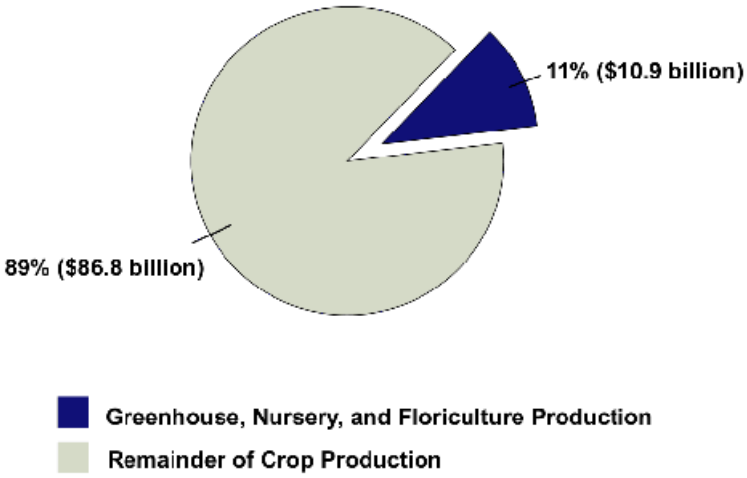
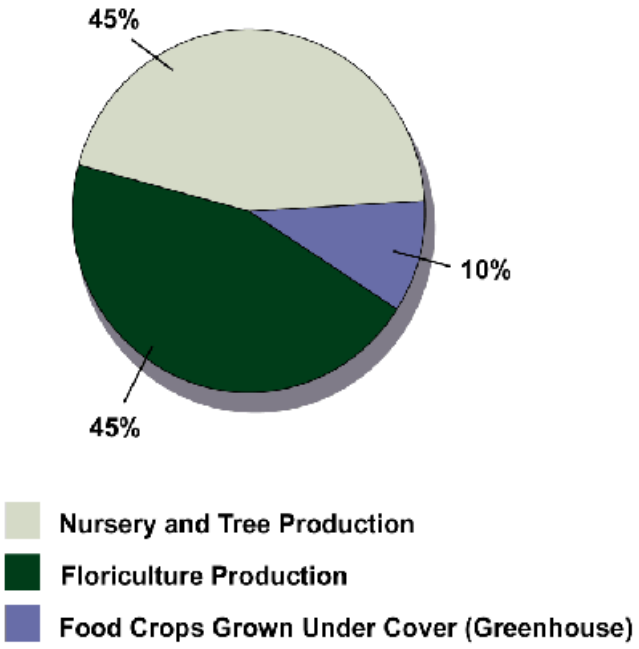


Exhibit 14. Values of Greenhouse, Nursery, and Floriculture Production Sales
(1997 Ag Census)



II.D. Characterization of the Forestry Production Industry

This section pertains to the forestry industry as classified within ***NAICS code 113 - Forestry and Logging***. As defined by NAICS, industries in this sector grow and harvest timber on a long production cycle (i.e., 10 years or more). Long production cycles use different production processes than short production cycles, which require more horticultural interventions prior to harvest, resulting in processes more similar to those found in the previous sections of this profile. The three subsectors included within NAICS code 113 are:

- ***Timber tract operations (NAICS code 1131)***, which consist of establishments engaged in operating timber tracts for the purpose of selling standing timber.

- ***Forest nurseries and gathering of forest products (NAICS code 1132)***, which primarily engage in growing trees for reforestation and gather forest products, such as gums, barks, balsam needles, rhizomes, fibers, Spanish moss, ginseng, and truffles.

- ***Logging (NAICS code 1133)***, which consists of establishments primarily engaged in cutting timber, cutting and transporting timber, and producing wood chips in the field.

Industries usually specialize in different stages of the production cycle, as indicated by the three NAICS codes. Reforestation requires production of seedlings in specialized nurseries. Timber production requires natural forest or suitable areas of land that are available for a long duration. The harvesting of timber (except when done on an extremely small scale) requires specialized machinery unique to the industry. Establishments gathering forest products, such as gums, barks, balsam needles, rhizomes, fibers, Spanish moss, and ginseng and truffles, are also included in this industry.

II.D.1. Definition of Forest Land

The U.S. Forest Service defines a forested area as "forest land" if it is at least one acre in size and *at least 10 percent occupied by forest trees of any size or formerly having had such tree cover and not currently developed for non-forest use*. (Examples of non-forest uses include areas for crops, improved pasture, residential areas, and other similar areas.) Forest land includes transition zones, such as areas between heavily forested and nonforested lands that are at least 10 percent stocked with forest trees and forest areas adjacent to urban and built-up lands (36 CFR 219).

In the United States, there are approximately 736.7 million acres of forest land. The distribution of this forest land among geographic regions is presented in Exhibit 15.

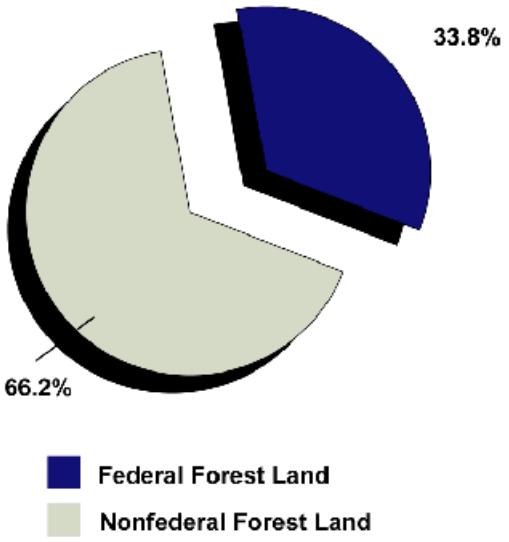
Exhibit 15. Distribution of U.S. Forested Land Area

Geographic Region	Total Land Area (in thousands of acres)	Forested Acres (in thousands)	Percent Forested
Northeast	126,816	85,380	67
North Central	286,764	83,108	29
Pacific Northwest	469,093	177,611	38
Pacific Southwest	103,934	39,011	38
Great Plains	194,299	4,232	2
Southeast	147,419	88,078	60
South Central	387,104	123,760	32
Rocky Mountains	547,918	135,499	25
Total	**2,263,347**	**736,679**	
Source: American Forest and Paper Association (AFPA), 1995			

Federal Versus Nonfederal Forest Lands

Of the 736.7 million acres, approximately 249.1 million acres (or 33.8 percent) are owned by the federal government. The remaining 487.6 million acres are owned by nonfederal entities, such as state or local governments, private citizens, or companies (see Exhibit 16).

Exhibit 16. Federal vs. Non federal Forest Lands (AFPA 1995)



Approximately 57 percent of all productive forest land in the U.S. is owned by 9.3 million non-industrial private landowners. These 353 million acres of land produce more than half of the nation's wood supply (AFPA, 1995).

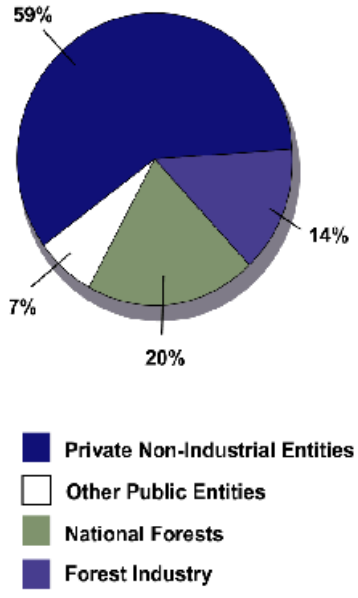
The majority of federal forest land is managed as the national forest system (NFS). The NFS includes:

- National forest lands reserved from the U.S. public domain.
- National forest lands acquired through purchase, exchange, donation, or other means.
- National grasslands.
- Other lands, waters, or interests administered by the U.S. Forest Service (FS) or designated for administration through the FS as part of the system.

The NFS contains 191 million acres, or 77 percent, of federal forest lands. (The remaining federal forest lands are managed by the Bureau of Land Management, the National Park Service, and other federal agencies.) The NFS is contained in 43 states and creates about 500,000 private sector jobs. Of the remaining nonfederal forests, privately held commercial forest lands make up the largest portion accounting for 347 million acres (71 percent).

Timberlands. Two-thirds of U.S. forest lands, or almost 490 million acres, are classified as timberlands. Timberlands are defined as forest lands used for the production of commercial wood products. Commercial timberland can be used for repeated growing and harvesting of trees. Seventy percent of timberlands are located in the East (AFPA, 1995). Exhibit 17 presents additional information about timberland ownership. Of the 490 million acres of timberland, federal, state, and local governments own 131 million acres (27 percent) and non-industrial private entities own 288 million acres (59 percent).

Exhibit 17. Timberland Ownership (AFPA 1995)



Private timberlands are mostly on small tracts of forest land. Only 600,000 landowners have holdings larger than 100 acres (AFPA, 1995). The forest products industry owns about 70 million acres (14 percent) of commercial timberland. One-third of the nation's annual timber harvest is from these forests (AFPA, 1995).

II.D.2. Consumption and Regeneration of Forest Products

The United States is the world's leading producer and consumer of forest products (e.g., paper products) and accounts for approximately one-fourth of the world's production and consumption (AFPA, 1995). The United States is also the world's largest producer of softwood and hardwood lumber. Specifically for timber, in 1996, total annual sales for commercial (i.e., nonfederal) timber and nontimber forest products were approximately $3.8 billion. Timber alone accounted for approximately 69 percent of those sales.

In fiscal year 1998, the NFS sold approximately174 million cubic feet (or 870 million board feet) of timber valued at approximately $80 million. NFS timber sales from the past 6 years are presented in Exhibit 18. Also in fiscal year 1998, BLM sold 43.7 million cubic feet (or 261 million board feet) of timber. (A value was not provided for the BLM timber sales.)

Exhibit 18. NFS Timber Sales, FY 1993-1998 (from U.S. Forest Service)

Fiscal Year	Approx. Volume (million cubic feet)	Value
1993	250	$192,942,739
1994	177	$125,340,385
1995	240	$140,460,250
1996	212	$125,226,853
1997	195	$123,681,846
1998	174	$80,195,720

Exhibit 19. Acres Seeded and Acres of Tree Planting (FY 199)

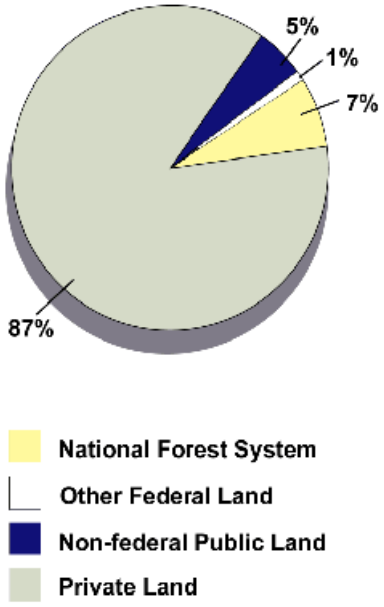


Exhibit 19 provides a breakout of where regeneration efforts occurred. To replenish the forests, more than 2.4 million acres in the U.S. were either seeded or planted with trees in government fiscal year 1996 (October 1995 - September 1996). The overwhelming majority of the regeneration efforts occurred on private lands where nearly 2.1 million acres were seeded or planted.

II.E. Geographic Distribution and Economic Trends

According to the 1997 National Resource Inventory (NRI), some changes have occurred in land use. Since 1982, federal land increased by 4.6 million acres, nonfederal rural land decreased by 36.7 million acres, and developed land increased by nearly 30 million acres. Cropland acreage, classified as irrigated, non-irrigated, cultivated, or non-cultivated acreage, nationally decreased by 45.9 million acres between 1982 and 1997. Rangeland decreased by 12.4 million acres and pastureland decreased by almost 14 million acres. Generally, a shift has occurred in irrigated agriculture from west to east across the country.

The distribution of prime farmland by land cover/use has also changed in the past 15 years. There were 330.6 million acres of prime farmland in 1997, which was down 11.7 million acres from 1982. Most (64 percent) of the prime farmland is in cropland, but large amounts are in pastureland (35.5 million acres) and forest land (47.7 million acres).

For more information from the 1997 NRI, please visit the website http://www.nhq.nrcs.usda.gov/NRI/1997. Additional information on the geographic distribution of the crop production industries and their economic trends is very extensive and available through many sources. National and state-specific information can be accessed through the Internet from the 1997 Agriculture Census at http://www.nass.usda.gov/census/ and the National Agriculture Statistics Service at http://www.usda.gov/nass/.